SEQUENCE LISTING

<110> Jessberger, et al.

<120> METHODS FOR IDENTIFYING, TREATING, AND INDUCING INFERTILITY USING SMC1 BETA

<130> 29636/39363A

<150> US 60/499,317
<151> 2003-08-29

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<170> PatentIn version 3.2

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Met Gly Glu Lys Thr Thr Asn Leu Arg Val Lys Asn Ile Gln Glu Leu
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Ile Ile Arg Gly Gly Cys Ser Glu Tyr His Phe Gly Asp Lys Pro Val

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Met Lys Lys Pro Lys Glu Arg Thr Gln Phe Phe Glu Glu Ile Ser Thr
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Ser Gly Glu Phe Ile Gly Glu Tyr Glu Ala Lys Lys Lys Lys Leu Gln
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Ala Ala Glu Arg Lys His Ala Lys Ile Glu Lys Glu Glu Ala Glu His
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Ala Ile Leu Asn Gln Lys Arg Pro Gln Tyr Ile Lys Ala Lys Glu Asn
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Val Ala Glu Leu Ala Asp Leu Asp Arg Ala Trp Lys Ser Phe Glu Lys
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Thr Gln Gly Asn Leu Lys Gln Ile Lys Glu Gln Ile Glu Glu His Lys
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Leu Glu Asp Lys Lys Gln Gln Glu Glu Ala Leu Lys Lys Glu Ile Glu
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Asn Thr Lys Ser Arg Met Ser Glu Val Asn Glu Glu Leu Ser Leu Ile
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Arg Asn Glu Leu Gln Asn Ala Gly Ile Asp Asn His Glu Gly Lys Arg
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Gln Gln Lys Arg Ala Glu Val Leu Glu His Leu Lys Arg Leu Tyr Pro
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Asp Ser Val Phe Gly Arg Leu Leu Asp Leu Cys His Pro Ile His Lys
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Lys Tyr Gln Leu Ala Val Thr Lys Leu Phe Gly Arg Tyr Met Val Ala
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Ile Val Val Ala Ser Glu Lys Ile Ala Lys Asp Cys Ile Arg Phe Leu
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Met Met Ile Asp Val Ile Lys Thr Gln Phe Pro Gln Leu Lys Lys Val
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Met Ile Lys Lys Lys His Leu Ala Thr Phe Tyr Arg Glu Gln Ser Gln
725 730 735

Leu Gln Ser Glu Leu Leu Asn Ile Asp Ser Gln Cys Thr Met Leu Ser
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835 840 845

Ile Asp Asn Leu Lys Lys Thr Glu Glu Glu Cys Leu Lys Ile Val Glu
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Lys Val Leu Ala Val Asp Arg Glu Val Gly Lys Leu Gln Lys Glu Val
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Val Ile Ile Gln Gly Ser Leu Glu Gln Lys Leu Leu Glu Lys His Asn
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Gly Ser Leu Glu Asp Ile Ile Glu Met Glu Leu Thr Glu Thr Glu Ser
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Thr Gln Ala Thr Ala Asp Ile Tyr Glu Lys Glu Ala Ser Ile Gln Ile
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Gln Glu Gln Phe Gln Met Ile Ile Ile Ser Leu Lys Glu Glu Phe
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Lys Arg Ile Glu Lys Leu Glu Glu Tyr Thr Lys Thr Cys Met Asp Cys
        435                 440                 445

Leu Lys Glu Lys Lys Gln Gln Glu Glu Thr Leu Val Asp Glu Ile Glu
    450                 455                 460

Lys Thr Lys Ser Arg Met Ser Glu Phe Asn Glu Glu Leu Asn Leu Ile
465                 470                 475                 480

Arg Ser Glu Leu Gln Asn Ala Gly Ile Asp Thr His Glu Gly Lys Arg
                485                 490                 495

Gln Gln Lys Arg Ala Glu Val Leu Glu His Leu Lys Arg Leu Tyr Pro
            500                 505                 510

Asp Ser Val Phe Gly Arg Leu Phe Asp Leu Cys His Pro Ile His Lys
        515                 520                 525

Lys Tyr Gln Leu Ala Val Thr Lys Val Phe Gly Arg Phe Ile Thr Ala
    530                 535                 540

Ile Val Val Ala Ser Glu Lys Val Ala Lys Asp Cys Ile Arg Phe Leu
545                 550                 555                 560
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Lys Glu Glu Arg Ala Glu Pro Glu Thr Phe Leu Ala Leu Asp Tyr Leu
565 570 575

Asp Ile Lys Pro Ile Asn Glu Arg Leu Arg Glu Leu Lys Gly Cys Lys
580 585 590

Met Val Ile Asp Val Ile Lys Thr Gln Phe Pro Gln Leu Lys Lys Val
595 600 605

Ile Gln Phe Val Cys Gly Asn Gly Leu Val Cys Glu Thr Met Glu Glu
610 615 620

Ala Arg His Ile Ala Leu Ser Gly Pro Glu Arg Gln Lys Thr Val Ala
625 630 635 640

Leu Asp Gly Thr Leu Phe Leu Lys Ser Gly Val Ile Ser Gly Gly Ser
645 650 655

Ser Asp Leu Lys Tyr Lys Ala Arg Cys Trp Asp Glu Lys Glu Leu Lys
660 665 670

Asn Leu Arg Asp Arg Arg Ser Gln Lys Ile Gln Glu Leu Lys Gly Leu
675 680 685

Met Lys Thr Leu Arg Lys Glu Thr Asp Leu Lys Gln Ile Gln Thr Leu
690 695 700

Ile Gln Gly Thr Gln Thr Arg Leu Lys Tyr Ser Gln Asn Glu Leu Glu
705 710 715 720

Met Ile Lys Lys Lys His Leu Val Ala Phe Tyr Gln Glu Gln Ser Gln
725 730 735

Leu Gln Ser Glu Leu Leu Asn Ile Glu Ser Gln Cys Ile Met Leu Ser
740 745 750

Glu Gly Ile Lys Glu Arg Gln Arg Arg Ile Lys Glu Phe Gln Glu Lys
755 760 765

Ile Asp Lys Val Glu Asp Asp Ile Phe Gln His Phe Cys Glu Glu Ile
770 775 780

Gly Val Glu Asn Ile Arg Glu Phe Glu Asn Lys His Val Lys Arg Gln
785 790 795 800

Gln Glu Ile Asp Gln Lys Arg Tyr Phe Tyr Lys Lys Met Leu Thr Arg
805 810 815

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Leu Asn Val Gln Leu Glu Tyr Ser Arg Ser His Leu Lys Lys Lys Leu
            820                 825                 830

Asn Lys Ile Asn Thr Leu Lys Glu Thr Ile Gln Lys Gly Ser Glu Asp
        835                 840                 845

Ile Asp His Leu Lys Lys Ala Glu Glu Asn Cys Leu Gln Thr Val Asn
    850                 855                 860

Glu Leu Met Ala Lys Gln Gln Gln Leu Lys Asp Ile Arg Val Thr Gln
865                 870                 875                 880

Asn Ser Ser Ala Glu Lys Val Gln Thr Gln Ile Glu Glu Glu Arg Lys
                885                 890                 895

Lys Phe Leu Ala Val Asp Arg Glu Val Gly Lys Leu Gln Lys Glu Val
            900                 905                 910

Val Ser Ile Gln Thr Ser Leu Glu Gln Lys Arg Leu Glu Lys His Asn
        915                 920                 925

Leu Leu Leu Asp Cys Lys Val Gln Asp Ile Glu Ile Ile Leu Leu Ser
    930                 935                 940

Gly Ser Leu Asp Asp Ile Ile Glu Val Glu Met Gly Thr Glu Ala Glu
945                 950                 955                 960

Ser Thr Gln Ala Thr Ile Asp Ile Tyr Glu Lys Glu Glu Ala Phe Glu
                965                 970                 975

Ile Asp Tyr Ser Ser Leu Lys Glu Asp Leu Lys Ala Leu Gln Ser Asp
            980                 985                 990

Gln Glu Ile Glu Ala His Leu Arg  Leu Leu Leu Gln Gln  Val Ala Ser
        995                 1000                1005

Gln Glu  Asp Ile Leu Leu Lys  Thr Ala Ala Pro Asn  Leu Arg Ala
    1010                1015                1020

Leu Glu  Asn Leu Lys Thr Val  Arg Asp Lys Phe Gln  Glu Ser Thr
    1025                1030                1035

Asp Ala  Phe Glu Ala Ser Arg  Lys Glu Ala Arg Leu  Cys Arg Gln
    1040                1045                1050

Glu Phe  Glu Gln Val Lys Lys  Arg Arg Tyr Asp Leu  Phe Thr Gln
    1055                1060                1065
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Cys Phe Glu His Val Ser Ile Ser Ile Asp Gln Ile Tyr Lys Lys
1070 1075 1080

Leu Cys Arg Asn Asn Ser Ala Gln Ala Phe Leu Ser Pro Glu Asn
1085 1090 1095

Pro Glu Glu Pro Tyr Leu Glu Gly Ile Ser Tyr Asn Cys Val Ala
1100 1105 1110

Pro Gly Lys Arg Phe Met Pro Met Asp Asn Leu Ser Gly Gly Glu
1115 1120 1125

Lys Cys Val Ala Ala Leu Ala Leu Leu Phe Ala Val His Ser Phe
1130 1135 1140

Arg Pro Ala Pro Phe Phe Val Leu Asp Glu Val Asp Ala Ala Leu
1145 1150 1155

Asp Asn Thr Asn Ile Gly Lys Val Ser Ser Tyr Ile Lys Glu Gln
1160 1165 1170

Thr Gln Asp Gln Phe Gln Met Ile Val Ile Ser Leu Lys Glu Glu
1175 1180 1185

Phe Tyr Ser Arg Ala Asp Ala Leu Ile Gly Ile Tyr Pro Glu Tyr
1190 1195 1200

Asp Asp Cys Met Phe Ser Arg Val Leu Thr Leu Asp Leu Ser Gln
1205 1210 1215

Tyr Pro Asp Thr Glu Gly Gln Glu Ser Ser Lys Arg His Gly Glu
1220 1225 1230

Ser Arg
1235

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<212> DNA
<213> Homo sapiens

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cccgaccgaa ggagccgacc ttgcctgcgc tacagcttcc ttattttcgt cgcctgttct 120

cctgatcctg cgtgttctaa aaacccctta ggctttccat gggttcccag accatggcgg 180

tggcgctgcc cagggacttg cggcaggacg ccaacctggc aaagaggagg cacgcggagc 240

tgtgcaggca gaagcgggtc ttcaacgcca gaaacaggat aattggggga gacactgaag 300

cctgggatgt tcaagttcat gaccagaaga taaaagaagc tactgaaaaa gctagacatg 360

aaacctttgc tgctgaaatg aggcaaaatg acaaaatcat gtgcatattg gaaaaccgga 420

aaaagaggga taggaaaaat ctctgtaggg ctatcaatga cttccaacag agctttcaga 480

agccagaaac tcgccgtgaa tttgatctgt ccgacccccc agcccttaag aaagatcttc 540

cagcccggca gtcagataat gatgttcgga atacgatatc aggaatgcag aaattcatgg 600

gagaggattt aaacttccat gagaggaaga aattccaaga ggaacaaaac agagaatggt 660

ctttgcagca gcaaagggaa tggaagaacg cccgtgctga acaaaaatgc gcagaggccc 720

tctacacaga gacaaggctg cagtttgacg agacagccaa gcacctccag aagctggaaa 780

gcaccaccag aaaggcagtt tgtgcatctg tgaaagactt caacaagagc caggccatcg 840

agtcagtgga aaggaaaaag caagagaaaa agcaagaaca agaggacaac ttggccgaga 900

tcaccaacct cctgcgtggg gacctgctct ccgagaaccc gcagcaggca gccagctcct 960

tcgggcccca ccgcgtggtc cctgaccgct ggaagggcat gacccaggag cagctggagc 1020

agatccgcct agtccagaag cagcaaatcc aggagaagct gaggctccag gaagaaaagc 1080

gccagcgaga cctggactgg gaccggcgga ggattcaggg ggctcgcgcc accctgctgt 1140

ttgagcggca gcagtggcgg cggcagcgcg acctgcgcag agctctggac agcagcaacc 1200

tcagcctggc caaggagcag catttgcaga aaaaatatat gaatgaagtc tatacaaatc 1260

aacccacggg agactatttc acacaattta atacaggaag tcgataatga ggaacacacc 1320

cttgttcccg tcattcacgt ataaagagtg gctaccttaa aaaaaaaaaa aaaaaaaaaa 1380

aaaaaaaaaa aaaaaaaaaa aaaaaa 1406

<210> 6
<211> 309
<212> PRT
<213> Homo sapiens

<400> 6

Met Arg Gln Asn Asp Lys Ile Met Cys Ile Leu Glu Asn Arg Lys Lys
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Arg Asp Arg Lys Asn Leu Cys Arg Ala Ile Asn Asp Phe Gln Gln Ser
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Phe Gln Lys Pro Glu Thr Arg Arg Glu Phe Asp Leu Ser Asp Pro Leu
35 40 45

Ala Leu Lys Lys Asp Leu Pro Ala Arg Gln Ser Asp Asn Asp Val Arg
50 55 60

Asn Thr Ile Ser Gly Met Gln Lys Phe Met Gly Glu Asp Leu Asn Phe

65 70 75 80

His Glu Arg Lys Lys Phe Gln Glu Glu Gln Asn Arg Glu Trp Ser Leu
85 90 95

Gln Gln Gln Arg Glu Trp Lys Asn Ala Arg Ala Glu Gln Lys Cys Ala
100 105 110

Glu Ala Leu Tyr Thr Glu Thr Arg Leu Gln Phe Asp Glu Thr Ala Lys
115 120 125

His Leu Gln Lys Leu Glu Ser Thr Thr Arg Lys Ala Val Cys Ala Ser
130 135 140

Val Lys Asp Phe Asn Lys Ser Gln Ala Ile Glu Ser Val Glu Arg Lys
145 150 155 160

Lys Gln Glu Lys Lys Gln Glu Gln Glu Asp Asn Leu Ala Glu Ile Thr
165 170 175

Asn Leu Leu Arg Gly Asp Leu Leu Ser Glu Asn Pro Gln Gln Ala Ala
180 185 190

Ser Ser Phe Gly Pro His Arg Val Val Pro Asp Arg Trp Lys Gly Met
195 200 205

Thr Gln Glu Gln Leu Glu Gln Ile Arg Leu Val Gln Lys Gln Gln Ile
210 215 220

Gln Glu Lys Leu Arg Leu Gln Glu Glu Lys Arg Gln Arg Asp Leu Asp
225 230 235 240

Trp Asp Arg Arg Arg Ile Gln Gly Ala Arg Ala Thr Leu Leu Phe Glu
245 250 255

Arg Gln Gln Trp Arg Arg Gln Arg Asp Leu Arg Arg Ala Leu Asp Ser
260 265 270

Ser Asn Leu Ser Leu Ala Lys Glu Gln His Leu Gln Lys Lys Tyr Met
275 280 285

Asn Glu Val Tyr Thr Asn Gln Pro Thr Gly Asp Tyr Phe Thr Gln Phe
290 295 300

Asn Thr Gly Ser Arg
305

<210> 7
<211> 1654
<212> DNA
<213> Mus musculus

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tgtttttttt ttccggatag ctcctgaagc ccagccgagt cccagagcca tggaggtagc 180

gatgtctaag gacctacaac aggaggccaa cctagccaag aagcggtaca ttgacctgtg 240

caggcaggga cggatcttcg acgccaggaa caggatcatt gggggagaca cacaagcctg 300

ggattttcaa gtccgtgacc agaagataaa agaaataact gacaaagcta ggcatgaagc 360

ctttgctgct gaaatgaagc acaatgacaa agtcatgtgc atggcgcatg accgggaaca 420

gaggcacagg aaacagctgt gtagagctat caatgacttc cagcagaact ttcagaagcc 480

agaaactcga cgtgagtttg atctttctga ccccctggcc ctccagaaag agcttccagc 540

ccgcatttca gacaatgaca tgcggaacac catatcagga atgcagaagt tcatgggaga 600

ggatttaaac ttccaagaga ggaggaggtt ccaaaaggaa cagagcagag aatggtttct 660

gcagcagcat ggggaacggg agaaagcccg ggctgaccac ctactggcag aacacctcca 720

cactcagacg agactcaagt ttgatgaaac agccagagag ttgatgaagc tggaaggctc 780

caccaggaag gaagtctgcg cagccgtgaa agcgttcaac aagaatcagg ttgtggagtt 840

gacagaaaga aagaggcaag agaagcaaca agaacaagaa gacaacatga ccgagatcac 900

caacctgctg catggagacc tgctttctga gaaccctcga ccggtggcca gctcctttgg 960

gtctcaccgt gtggtccttg accgctggaa gggcatgaac cgagagcagc tggaggagat 1020

ctggttcacg cagaagcggc aaatccagga gaagctgagg cttcaggagg aagagcgcca 1080

gcacagcatg gactgggatt tgcgcaggat ccggaaggct catgccagcc tgctgcatga 1140

gcggcagcag cagcgcttgc ttcgggagca gcgcagggcc ctggactgca gcaacctcaa 1200

cctggccagg cagcagtact tacagaaaaa acaaatgaat acagcctcct caagtcagcc 1260

cacagaagac tatttctcac agtttaatac aaggagccgc tgagagaacc gactgctttc 1320

cttgtttata gtagttcctc taggagtcac gcttatttca aagtgaatct gctccttggt 1380

ctgaacaccc cgtatgggca tgtgcacatg cggtcaggct ctgctctggg aagagctcta 1440

acatggcttt gggtgctgtg gacataggac acagtgaacc attccagaga ggctacactg 1500

aggcctgtgt gctgctcaag ctccaagctg gctgctcagc cattctctga ctcagtgact 1560

gaccatcata ggtgttgctt cgtgtgcccc atgaagcact tcttcctcag cttctcaccc 1620

accataaaga ggcaccaacc tgcttaccac tccc 1654

<210> 8
<211> 309
<212> PRT
<213> Mus musculus

<400> 8

Met Lys His Asn Asp Lys Val Met Cys Met Ala His Asp Arg Glu Gln
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Arg His Arg Lys Gln Leu Cys Arg Ala Ile Asn Asp Phe Gln Gln Asn
20 25 30

Phe Gln Lys Pro Glu Thr Arg Arg Glu Phe Asp Leu Ser Asp Pro Leu
35 40 45

Ala Leu Gln Lys Glu Leu Pro Ala Arg Ile Ser Asp Asn Asp Met Arg
50 55 60

Asn Thr Ile Ser Gly Met Gln Lys Phe Met Gly Glu Asp Leu Asn Phe
65 70 75 80

Gln Glu Arg Arg Arg Phe Gln Lys Glu Gln Ser Arg Glu Trp Phe Leu
85 90 95

Gln Gln His Gly Glu Arg Glu Lys Ala Arg Ala Asp His Leu Leu Ala
100 105 110

Glu His Leu His Thr Gln Thr Arg Leu Lys Phe Asp Glu Thr Ala Arg
115 120 125

Glu Leu Met Lys Leu Glu Gly Ser Thr Arg Lys Glu Val Cys Ala Ala
130 135 140

Val Lys Ala Phe Asn Lys Asn Gln Val Val Glu Leu Thr Glu Arg Lys
145 150 155 160

Arg Gln Glu Lys Gln Gln Glu Gln Glu Asp Asn Met Thr Glu Ile Thr
165 170 175

Asn Leu Leu His Gly Asp Leu Leu Ser Glu Asn Pro Arg Pro Val Ala
180 185 190

Ser Ser Phe Gly Ser His Arg Val Val Leu Asp Arg Trp Lys Gly Met
195 200 205

Asn Arg Glu Gln Leu Glu Glu Ile Trp Phe Thr Gln Lys Arg Gln Ile
210 215 220

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Gln Glu Lys Leu Arg Leu Gln Glu Glu Glu Arg Gln His Ser Met Asp
225                 230                 235                 240

Trp Asp Leu Arg Arg Ile Arg Lys Ala His Ala Ser Leu Leu His Glu
                245                 250                 255

Arg Gln Gln Gln Arg Leu Leu Arg Glu Gln Arg Arg Ala Leu Asp Cys
            260                 265                 270

Ser Asn Leu Asn Leu Ala Arg Gln Gln Tyr Leu Gln Lys Lys Gln Met
        275                 280                 285

Asn Thr Ala Ser Ser Ser Gln Pro Thr Glu Asp Tyr Phe Ser Gln Phe
    290                 295                 300

Asn Thr Arg Ser Arg
305
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<210> 9
<211> 336
<212> DNA
<213> Mus musculus

<220>
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<222> (108)..(108)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (159)..(159)
<223> n is a, c, g, or t

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<223> n is a, c, g, or t

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<221> misc_feature
<222> (333)..(333)
<223> n is a, c, g, or t

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atgagctgca aatccagtca gagtctgctc aacagtagaa cccgaaanaa ctacttgtct 120

tggtaccagc agaaaccagg tcagtctcct aaactgctna tctactgggc atccactngg 180

gaatctgggg tccctgatcg cttcacaggc agtggatctg ggacagattt cactctcacc 240

atcagcagtg tgcagactga agacctggca gtttattact gcaagcaatc ttatnatctc 300

ttcacgttcg gctcggggac aaagttggaa atnaaa 336

<210> 10
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic primer

<400> 10
ttttattaat cacggcaaga aaagcccac 29

<210> 11
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic primer

<400> 11
ttttaccggt gcctcagccg cttcc 25

<210> 12
<211> 278
<212> DNA
<213> Mus musculus

<400> 12
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gagagcaagt ctgtcccggc ggtccgcttt ccgcagcgga gcagggatcc aattccccgg 120

gcaacgccaa cctccgttgt aagcaacggc gcctcgctcg ctctccttcc cccgcgccag 180

tctcgcgaga cttcgaaaag aatttcttcc cgcgcttttt ttttttttt tcctcacggg 240

agcacgagga agcggctgag gcacggcgcg cagccatg 278

<210> 13
<211> 267
<212> DNA
<213> Homo sapiens

<400> 13
agaacaggcg acgaaaataa ggaagctgta gcgcaggcaa ggtcggctcc ttcggtcggg 60

caggggaaag acaagccttt agcgcagttt tccgtcgggc tcccagtgac gccgcagagg 120

tacagacgct cccgctctct cggaaatgtc aacaactcgt tgctaaggaa cggctccgcg 180

cttgccgcgt ctcgctctct tctcgcgaca cttggcgaat cccttcccgc gctttttccg 240

cgggcgcttg ataacgcggg tgaggcg 267